

PATENT

Atty. Dkt. No. AMAT/3032.C7/DSM/LOW K/JW

REMARKS

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This is intended as a full and complete response to the Final Office Action dated August 6, 2004, having a shortened statutory period for response set to expire on November 6, 2004. Please reconsider the claims pending in the application for reasons discussed below.

Claims 1, 3, 5-7, 8, 10-13, and 15-20 remain pending in the application and are shown above. Claims 1, 3, and 5-7 stand rejected. The Examiner has indicated that claims 8, 10-13 and 15-20 are allowable. Reconsideration of the rejected claims is requested for reasons presented below.

Claims 1, 3, 5, and 6 stand rejected under 35 U.S.C. § 102(e) as being anticipated by *Rose, et al.* (U.S. Patent No. 6,068,884). The Examiner states that the phrase "wherein the two or more organosiloxanes are selected from the group consisting of 1,3,5,7-tetramethylcyclotetrasiloxane, octamethylcyclotetrasiloxane, 1,3,5,7,9-pentamethylcyclopentasiloxane, and 1,3,5,7-tetrasilano-2,6-dioxy-4,8-dimethylene" in claim 1 means that the two or more organosiloxanes can be selected from the same or different group from any of the four groups listed above. The Examiner further states that claim 1 doesn't disclose that the two or more organosiloxanes must be selected from more than one group or at least two groups from the group consisting of 1,3,5,7-tetramethylcyclotetrasiloxane, octamethylcyclotetrasiloxane, 1,3,5,7,9-pentamethylcyclopentasiloxane, and 1,3,5,7-tetrasilano-2,6-dioxy-4,8-dimethylene. Applicants respectfully traverse the rejection.

Applicants respectfully submit that the Examiner errs in reading claim 1 as not requiring that the two or more organosiloxanes be selected from at least two of the organosiloxane compounds in the group of 1,3,5,7-tetramethylcyclotetrasiloxane, octamethylcyclotetrasiloxane, 1,3,5,7,9-pentamethylcyclopentasiloxane, and 1,3,5,7-tetrasilano-2,6-dioxy-4,8-dimethylene. Applicants submit that claim 1 clearly recites a method that comprises reacting two or more organosiloxanes and in which the two or more organosiloxanes are selected from a group of four organosiloxane compounds, i.e., 1,3,5,7-tetramethylcyclotetrasiloxane, octamethylcyclotetrasiloxane, 1,3,5,7,9-pentamethylcyclopentasiloxane, and 1,3,5,7-tetrasilano-2,6-dioxy-4,8-dimethylene.

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Applicants further note that the Examiner errs in stating that each organosiloxane compound of the group is an organosiloxane group. Each member of the group is a specific organosiloxane compound, not a group of organosiloxane compounds. Thus, the Examiner has provided no support for his assertion that claim 1 includes reacting organosiloxanes, wherein the organosiloxanes are from the same group.

With respect to *Rose, et al.*, the Examiner asserts that *Rose, et al.* discloses that the two or more organosiloxanes can be a mixture (two or more) of organosiloxanes and selected from the group consisting of OMCTS (columns 3-6). Applicants note that *Rose, et al.* teaches that mixtures that contain an organosilicon precursor(s) may be used to deposit the films described therein (column 4, lines 63-67). *Rose, et al.* provides OMCTS as a cyclic organosilicon precursor that may be used (column 6, lines 17-19). However, *Rose, et al.* does not suggest any mixtures of two or more organosiloxanes. Furthermore, *Rose, et al.* does not include tetramethylcyclotetrasiloxane, 1,3,5,7,9-pentamethylcyclopentasiloxane, or 1,3,5,7-tetrasilano-2,6-dioxy-4,8-dimethylene in its list of examples of suitable cyclic organosilicons (lines 17-25, column 6). Applicants submit that *Rose, et al.*'s broad disclosure of using a mixture of organosilicon precursors does not teach or suggest reacting two or more organosiloxanes, wherein at least one of the organosiloxanes is a cyclic organosiloxane comprising C, H, and O, and wherein the two or more organosiloxanes are selected from the group consisting of 1,3,5,7-tetramethylcyclotetrasiloxane, octamethylcyclotetrasiloxane, 1,3,5,7,9-pentamethylcyclopentasiloxane, and 1,3,5,7-tetrasilano-2,6-dioxy-4,8-dimethylene.

Thus, *Rose, et al.* does not teach, show, or suggest a method for depositing a low dielectric constant film on a substrate, comprising reacting two or more organosiloxanes, wherein at least one of the organosiloxanes is a cyclic organosiloxane comprising C, H, and O, and wherein the two or more organosiloxanes are selected from the group consisting of 1,3,5,7-tetramethylcyclotetrasiloxane, octamethylcyclotetrasiloxane, 1,3,5,7,9-pentamethyl-cyclopentasiloxane, and 1,3,5,7-tetrasilano-2,6-dioxy-4,8-dimethylene, while applying RF power, wherein the low dielectric constant film comprises silicon-carbon bonds and a dielectric constant of

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about 3 or less, as recited in claim 1. Applicants respectfully request withdrawal of the rejection of claim 1 and of claims 3, 5, and 6, which depend thereon.

Claim 7 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over *Rose, et al.*, as applied to claim 1 above, in view of *Grill, et al.* (U.S. Patent No. 6,147,009). As discussed above with respect to claim 1, *Rose, et al.* does not teach or suggest reacting at least two organosiloxanes selected from the group consisting of 1,3,5,7-tetramethylcyclotetrasiloxane, octamethylcyclotetrasiloxane, 1,3,5,7,9-pentamethyl-cyclopentasiloxane, and 1,3,5,7-tetrasilano-2,6-dioxy-4,8-dimethylene. Applicants further submit that the teaching of pulsed RF in *Grill, et al.*, alone, or in combination with *Rose, et al.* does not teach or suggest reacting at least two organosiloxanes selected from the group consisting of 1,3,5,7-tetramethylcyclotetrasiloxane, octamethylcyclotetrasiloxane, 1,3,5,7,9-pentamethylcyclopentasiloxane, and 1,3,5,7-tetrasilano-2,6-dioxy-4,8-dimethylene. As *Rose, et al.* in view of *Grill, et al.* does not provide all of the limitations of claim 1, *Rose, et al.* in view of *Grill, et al.* does not provide all of the limitations of claim 7, which depends from claim 1. Applicants respectfully request withdrawal of the rejection of claim 7.

In conclusion, the references cited by the Examiner, alone or in combination, do not teach, show, or suggest the invention as claimed.

Having addressed all issues set out in the Final Office Action, Applicants respectfully submit that the claims are in condition for allowance and respectfully request that the claims be allowed.

Respectfully submitted,



Keith M. Tackett
Registration No. 32,008
MOSER, PATTERSON & SHERIDAN, L.L.P.
3040 Post Oak Blvd. Suite 1500
Houston, TX 77056
Telephone: (713) 623-4844
Facsimile: (713) 623-4846
Attorney for Applicant(s)

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